












Glenreagh PS Garden Project Stage 2 Science, Technology		
Unit overview	Duration	
How can we create a useful space for all living things in our school environment? The Coffs Harbour Botanic Gardens have donated their old board walk to the school. The school in consultation with the P&C have decided to use this resource to create a garden space for all living things in our school environment. ES1 and S1 students will learn who uses our school grounds, how can we attract and protect these species. Students will also consider the population of our students and community and their history when designing elements of the garden.	13 weeks	
Outcomes	Assessment overview	
Science and Technology K-6 ST2-2DP-T selects and uses materials, tools and equipment to develop solutions for a need or opportunity ST2-5LW-T describes how agricultural processes are used to grow plants and raise animals for food, clothing and shelter Science K-10 (inc. Science and Technology K-6) <ul style="list-style-type: none"> › ST2-1VA shows interest in and enthusiasm for science and technology, responding to their curiosity, questions and perceived needs, wants and opportunities › ST2-2VA demonstrates a willingness to engage responsibly with local, national and global issues relevant to their lives, and to shaping sustainable futures › ST2-16P describes how products are designed and produced, and the ways people use them › ST2-15I describes ways that information solutions are designed and produced, and factors to consider when people use and interact with information sources and technologies 	Students will complete a range of multimodal resources to share with other students and community members. Students will complete a number of designs and models to represent our garden space and individual elements. Students will use coding to solve digital technology challenges.	
Content	Teaching, learning and assessment	Resources
Design and Production Identifying and defining <ul style="list-style-type: none"> ▪ critique needs or opportunities for designing solutions through evaluating products and processes ▪ define a need or opportunity according to functional and aesthetic criteria ▪ consider potential resources in defining design needs and opportunities ▪ investigate and research materials, components, tools and techniques to produce design solutions (ACTDEP014) Researching and planning <ul style="list-style-type: none"> ▪ identify and define a design problem with consideration of practical and aesthetic needs ▪ consider sustainable use of resources and time constraints in planning design solutions ▪ develop, record and communicate design ideas and decisions using appropriate technical terms ▪ produce labelled and annotated drawings including digital graphic representations (ACTDEP015) ▪ plan a sequence of production steps when producing designed solutions individually and collaboratively (ACTDEP018) Stage 2 - Information There are processes and considerations involved in designing and producing information solutions.	Phase 1: Weeks 1-4 Weeks 1&2 - Brainstorm who uses our garden space? Brainstorm elements to include in the garden? In groups students research four driving questions and produce a digital text to teach others about their area of expertise. <i>What if native bees were removed from the ecological web?</i> <i>What flora and fauna are native to our area? How/Why have they adapted to our area?</i> <i>What kind of plants did the local Gumbaynggir people use to support and sustain life?</i> <i>How can we attract and sustain native insects and animals?</i> Weeks 3&4 - In groups students will measure the garden space and create a scale drawing for a draft plan of how the garden will look. We will pool our ideas and decide on a final plan for the garden space. Students will collaboratively create a model of the garden i.e. each group of students will be responsible for creating a specific element for the model. Students will then code Ozobot through the model and produce a digital tour of the garden to share with community members.	<ul style="list-style-type: none"> • A3 paper • rulers • iPads and laptops for research • iPads for creating digital texts • Recycled materials for building model • Ozobots & iPads for coding through garden model.
	Phase 2: Weeks 5-8 <i>How can we fund this project and who can help us?</i> Week 5 – List the materials needed for each element. Research the cost of these materials. Weeks 6&7 – Plan a fundraising event and develop a business plan and budget with estimated profit. <u>Begin building garden space. Each class will have designated elements to design and work with community members to build.</u>	<ul style="list-style-type: none"> • iPads & laptops for research • Materials for beginning to build garden space

<p>Students:</p> <ul style="list-style-type: none"> use common digital technologies and applications to organise and communicate information for a specific task, eg word processing and digital presentation software  investigate the effectiveness of an information solution for its intended use, eg a game or animated story book demonstrate how a variety of media can be combined to address the needs of a specific audience, eg combining visual images, sound and text in a digital presentation    <p>People interact with information sources and technologies in a variety of ways.</p> <p>Students:</p> <ul style="list-style-type: none"> interview the users of an information solution and find out how the design has influenced their decisions and opinions, eg the design of advertisements   explore how people use current and emerging technologies to communicate, access and record information, eg email, mobile phones, blogs and wikis  <p>A range of factors need to be considered when using information sources and technologies.</p> <p>Students:</p> <ul style="list-style-type: none"> demonstrate appropriate safety and etiquette in relation to computer usage, eg general computer care, file security, maintaining confidentiality of passwords, printing and sharing resources    acknowledge ownership of information when selecting and using information, eg citing sources  	<p>Phase 3: Weeks 9 - Week 3 (Term 3)</p> <p>Week 9 - Create garden care books or multimodal texts to teach ES1 and S1 students how to care for the gardens.</p> <p>Weeks 10 - How can we streamline garden care with automated machinery? In two teams develop an innovative product powered by Sphero that will streamline garden care e.g. seed planter, irrigator, rotary hoe etc. This product is to be presented in a Tournament of Minds style presentation in Education Week Term 3.</p>	<ul style="list-style-type: none"> iPads and laptops to research and create multimodal texts. Spheros Recycled materials Art and craft supplies such as plastic cups, pipe cleaners, straws, skewers etc.
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<p>Evaluation</p>
